CLAIMS

What is claimed is:

1. A method for the rapid analysis of live cells, by detecting long and thin micro-colonies produced from cells trapped in small, long, thin, micro-channels that are open from both sides and attached to a filtration material, which method comprises:

- filtrating of investigated sample through a device consisting from a micro-array of long and thin micro-channels collected in a micro-channel plate, with a filter attached to one side of the micro-channel plate for trapping cells presented in a sample in the micro-channels on the surface of the filter, where some micro-channels can obtain cells and some not,
- attaching solid or liquid nutrient media to the side of filter opposite of micro-channel plate,
- growing of micro-colonies in micro-channels from trapped cells,
- replacing the micro-plate with a filter and micro-colonies on another surface are filled by absorbent or fluorescent dyes in order to colorize the micro-colonies and increase their light absorbance or make them fluorescent,
- replace the micro-plate with a filter and place colored or fluorescent micro-colonies under a light or fluorescent microscope and detect and enumerate colored or fluorescent micro-colonies which number correlate to live cells in initial sample.

2. The method according to Claim 1, wherein micro-colonies don't need additional coloration and are detected by a natural increase of light absorbance, light scattering (turbidity), or natural

fluorescence in comparison with empty micro-channels that don't possess named optical characteristics.

3. The method according Claim 1, wherein micro-colonies are detected using coloration by dyes that change the color or fluorescence of micro-colonies after reaction with cells structures or biomolecules.

4. The method according Claim 1, wherein micro-colonies are detected by coloration of their body or surrounding extracellular space by chromogenic or fluorogenic substrates that reveal a color or fluorescence after cleaving by specific indicator enzymes or enzymes attached to antibodies.